(WQ – 5) Water Quality Infiltration Assessment Guide

ECiw (dS/m)	SAR		* adj.RNa			
	High Ca Low Na	High Na Low Ca	High Ca Low Na Low HCO_3	High Ca Low Na High HCO_3	High Na Low Ca Low HCO_3	High Na Low Ca High HCO_3
0.5	0.71	4.0	0.64	0.9	3.2	4.3
1.0	1.0	5.7	1.2	1.6	5.7	7.2
2.0	1.41	8.1	2.1	2.8	9.7	11.5
3.0	1.73	9.9	3.0	3.7	13.1	14.8
4.0	2.0	11.4	3.7	4.5	15.6	17.6

ECiw =Electrical Conductivity of irrigation water; SAR = Sodium Adsorption Ratio; adj.RNa = adjusted Residual Sodium (the adj.RNa replaces the older adj.SAR method which is no longer recommended)

Infiltration Assessment

(Affects infiltration rate of water into the soil. Evaluated using ECiw & SAR or adj.RNa together)

SAR Or adj.RNa	Degree of Restriction on USE ECiw (dS/m)		
	None	Slight to Moderate	Severe
0 – 3	>0.7	0.7 - 0.2	<0.2
3 – 6	>1.2	1.2 – 0.3	<0.3
6 – 12	>1.9	1.9 – 0.5	<0.5
12 – 20	>2.9	2.9 – 1.3	<1.3
20 - 40	>5.0	5.0 – 2.9	<2.9

Potential Reduction in Infiltration due to SAR (or adj.RNa) and ECiw (Soil Type determines degree of problem)

Least affected-------- -------Moderately affected-------- ------Most affected

Coarse	Moderately Coarse	Medium	Moderately Fine	Fine
Sands, fine Sands, V. fine Sands, Loamy Sands, Loamy F. Sands, LoamyV. F. Sand	Sandy Loam, fine Sandy Loam	Very fine Sandy Loam, Loam, Silt Loam, Silt	Sandy Clay Loam, Silty Clay Loam, Clay Loam	Sandy Clay, Silty Clay, Clay

NOTE: the SAR and adj.RNa calculations were based on the following concentrations:
High Ca = 70% of meq./l of cations
Low Na = 20% of meq./l of cations
Low HCO3 = 20% of meq./l of anions
Low Ca = 20% of meq./l of cations
High Na = 70% of meq./l of cations
High HCO3 = 70% of meq./l of anions
Magnesium was kept at 10% of meq./l of cations

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